

At page 4, at line 26, delete "Fig.1 is" and insert "--Figs. 1A, 1B and 1C (SEQ. ID No.2) comprise--"; at line 28, after "Fig.2" insert "--(SEQ ID No.3)--"; at line 33, delete "Fig.4 (SEQ. ID No.4) and (SEQ. ID No.5) is" and insert "--Figs. 4A through 4F (SEQ. ID No.4 and SEQ. ID No.5) comprise--"; and, at line 34, after "antigen." insert the following:

--The numbers along the left-hand margins of Figs. 4A, 4C and 4E designate the amino acid positions, and the numbers along the right-hand margins of Figs. 4B, 4D and 4F designate the nucleotide positions.--; at page 4, line 35, delete "Fig. 5 is" and insert "--Figs.5A, 5B and 5C (SEQ ID No.7 and SEQ ID No.6) comprise--".

In the Claims:

Cancel claims 1-37 without prejudice and insert the following claims:

Sub 12
38. A purified protein of the *Helicobacter pylori* cytotoxin associated immunodominant (CAI) antigen.

AB
39. The purified protein of claim 38 wherein said protein is recombinantly produced.

40. A purified protein of the *Helicobacter pylori* cytotoxin associated immunodominant (CAI) antigen comprises the amino acid sequence set forth in SEQ ID NO: 5.

41. The purified protein of claim 40 wherein said protein is recombinantly produced.

42. A polypeptide sequence of the *Helicobacter pylori* cytotoxin associated immunodominant (CAI) antigen, which polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to Helicobacter pylori, and (iii) exhibits substantially no contribution to toxicity.

43. The polypeptide sequence of claim 42 which comprises at least ten amino acids.

44. The polypeptide sequence of claim 42 which comprises about five to about fifteen amino acids.

45. A polypeptide sequence of the *Helicobacter pylori* cytotoxin associated immunodominant (CAI) antigen amino acid sequence set forth in SEQ ID NO: 5, which polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to *Helicobacter pylori*, and (iii) exhibits substantially no contribution to toxicity.

46. The polypeptide sequence of claim 45 which comprises at

least ten amino acids.

Sub
C4 47. The polypeptide sequence of claim 45 which comprises about five to about fifteen amino acids.

48. A prophylactic or therapeutic vaccine comprising an effective amount of a polypeptide sequence of the *Helicobacter pylori* cytotoxin associated immunodominant (CAI) antigen, which polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to *Helicobacter pylori*, and (iii) exhibits substantially no contribution to toxicity.

49. The vaccine of claim 48 wherein said polypeptide sequence comprises at least ten amino acids.

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C5- 50. The vaccine of claim 48 wherein said polypeptide sequence comprises about five to about fifteen amino acids.

51. The vaccine of claim 48 which further comprises an effective amount of a second polypeptide sequence of the *Helicobacter pylori* heat shock protein, which second polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to *Helicobacter*

pylori, and (iii) exhibits substantially no contribution to toxicity.

52. The vaccine of claim 51 wherein said second polypeptide sequence comprises at least ten amino acids.

53. The vaccine of claim 51 wherein said second polypeptide sequence comprises about five to fifteen amino acids.

54. A prophylactic or therapeutic vaccine comprising an effective amount of a polypeptide sequence of the *Helicobacter pylori* cytotoxin associated immunodominant (CAI) antigen amino acid sequence set forth in SEQ ID NO: 5, which polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to *Helicobacter pylori*, and (iii) exhibits substantially no contribution to toxicity.

55. The vaccine of claim 54 wherein said polypeptide sequence comprises at least ten amino acids.

56. The vaccine of claim 54 wherein said polypeptide sequence comprises about five to about fifteen amino acids.

57. The vaccine of claim 54 which further comprises an

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effective amount of a second polypeptide sequence of the *Helicobacter pylori* heat shock protein amino acid, which second polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to *Helicobacter pylori*, and (iii) exhibits substantially no contribution to toxicity.

58. The vaccine of claim 57 wherein said second polypeptide sequence comprises at least ten amino acids.

Sub
PS 59. The vaccine of claim 57 wherein said second polypeptide sequence comprises about five to fifteen amino acids.

60. A method of preparation of a prophylactic or therapeutic vaccine which comprises bringing into association:

(1) an effective amount of a polypeptide sequence of the *Helicobacter pylori* cytotoxin associated immunodominant (CAI) antigen, which polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to *Helicobacter pylori*, and (iii) exhibits substantially no contribution to toxicity, and

(2) a pharmaceutically acceptable carrier.

61. The method of claim 60 which further comprises adding

Scout
an effective amount of a second polypeptide sequence of the *Helicobacter pylori* heat shock protein, which second polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to *Helicobacter pylori*, and (iii) exhibits substantially no contribution to toxicity.

62. A method of preparation of a prophylactic or therapeutic vaccine which comprises bringing into association:

(1) an effective amount of a polypeptide sequence of the *Helicobacter pylori* cytotoxin associated immunodominant (CAI) antigen amino acid sequence set forth in SEQ ID NO: 5, which polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to *Helicobacter pylori*, and (iii) exhibits substantially no contribution to toxicity, and

(2) a pharmaceutically acceptable carrier.

63. The method of claim 62 which further comprises adding an effective amount of a second polypeptide sequence of the *Helicobacter pylori* heat shock protein, which second polypeptide sequence: (i) comprises at least five amino acids, (ii) can be used to induce the production of antibodies to *Helicobacter*